

ABSTRACT OF THE DISCLOSURE

The present invention, illustrated in various embodiments, provides mechanisms for transferring data in wireless communications systems. In one exemplary embodiment, the data is transferred in an access point (AP) used in a wireless local area network (WLAN), which comprises a wireless communication system connected to a local area network (LAN). The access point includes a baseband chip capable of adapting various radio frequency (RF) units. Each RF unit in turns includes a plurality of RF sub units connected in a daisy-chain manner. Each RF sub unit is also connected to at least one antenna. The access point thus includes a number of antennas that, together with the RF units and the baseband chip, form a smart antenna. In a receiving mode, the data received from the smart antenna travels through the RF sub units in each RF unit, and the data from the RF units travels to the baseband chip. Conversely, in a transmitting mode, the data transmitted from the baseband chip travels to the RF units, and in each RF unit the data travels through the sub units to the smart antenna. In one embodiment, each RF sub unit is removably connected to another RF sub unit, and each RF unit is removably connected to the baseband chip, which allows flexibility in selecting a system configuration with an appropriate number of antennas for the smart antenna.